

Foreword: The Heterodox in Logic and Reason

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This *SAJL* issue is dedicated to the Peruvian philosopher José Francisco Miró Quesada Cantuarias (1918–2019), or Paco, as his friends called him. He was born in Lima on 21 December 1918, and his parents were Óscar Miró Quesada de la Guerra and María Josefina Cantuarias Dañino.¹ Paco was undoubtedly the most important Peruvian philosopher of logic of the twentieth-century. He studied philosophy, law, and mathematics, but also found time to be an educator, a journalist, a politician, and a father. In his political and diplomatic career, Paco was Peru's Minister of Education (1963–1964) and Ambassador to France (1967–1969). As for his academic presence in the world, he stands out for having been the first Latin American president of the International Federation of Philosophical Societies (FISP) between 1993 and 1998, and today remains one of the five honorary presidents of this institution.

Miró Quesada's contributions to logic can be divided into four categories, all of which are very closely interconnected.

The first and most important category—not only in terms of his contributions to logic, but also of his work as a whole—comprises his works on the theory of reason. Paco devoted most of his academic efforts to construct a theory of reason adequate to understand the most important logical and mathematical discoveries of his time: Gödel's incompleteness theorems and what he called 'heterodox logics', the name inspiring the title of this issue. These works include his article and book equally entitled *Apuntes para una Teoría de la*

¹There is often a confusion regarding his surnames, especially among non-Peruvians, that is worth clarifying here. Paco is often referred to simply as 'Francisco Quesada' or 'Quesada', which is incorrect because his surnames are 'Miró Quesada' and 'Cantuarias'. In Peru, as well as in several Latin-American countries, we are assigned two *apellidos* or surnames: the first one usually corresponds to our father's first surname, and the second one to that of our mother. Accordingly, Paco's first surname is 'Miró Quesada' and the second one is 'Cantuarias'. It is common that a Peruvian be referred to only by the first surname. Hence, it would be correct to call Paco simply 'Miró Quesada', but it is wrong to call him 'Miró' or 'Quesada', for 'Miró Quesada' is a composed (but non-hyphenated) individual surname that cannot be divided. However, it did originate—almost two centuries ago—from the conjunction of the individual first surnames of Tomás Gómez Miró y Rubini and Josefa de Quesada y Velarde, Paco's great-grandparents.



Francisco Miró Quesada Cantuarias (1918–2019)

Razón (*Notes for a Theory of Reason*, 1962–1963), where he advanced the first steps of his theory of reason.

Paco went on to write several works on the theory of reason in relation not only to logic, but also to other fields such as the history of philosophy, intuition, scientific and non-scientific theorising, the empirical sciences (e.g. physics, economics, history, linguistics), social issues, morality, law, politics, religion, myth, etc. Most of these topics are systematically addressed in his final and most complete work in this category: *Esquema para una Teoría de la Razón* (*Outline for a Theory of Reason*), a work that he started in the 1980s but did not complete until 2012 for the publication of his *Obras Esenciales* (*Essential Works*, 10 vols. projected, URP, 2007–2014).

In a way, we can say that almost all Miró Quesada's works were works on the theory of reason, since this was the leitmotif that guided his enquiries.

The second category is the most directly relevant to logic, which comprises his contributions to pure and philosophical logic. This part of Paco's work is not sufficiently known and discussed either inside or outside Peru, despite being a very fertile and interesting one. It is sad to say that his most influential paper in this category was never published in the language it was originally written, English, and that all we have available to this day is a translation into Spanish—which he presumably read and approved—published in the collection *Lógica: Aspectos Formales y Filosóficos* (*Logic: Formal and Philosophical Aspects*, PUCP, 1978). We are referring to his talk, 'Heterodox logics and the problem of the unity of reason', presented at the III SLALM (UNICAMP, 1976),

and which is mainly known for being the talk where the term ‘paraconsistent’ was introduced into the academic community. But the real importance of this work lies in its classification of the various systems of heterodox or non-classical logics—which we consider more exhaustive than other rival attempts—and its discussion on the significance of the diversity of logics for a major philosophical problem such as the unity of reason.

Paco also proposed some contributions to pure formal logic, but all of them remain largely unexamined. For example, he proposed a system of first-order logic without variables to avoid what he considered a counter-intuitive circumstance: the formal chains of deduction of the various existing first-order deductive systems included open formulae, which could be neither true nor false. Similarly, he has proposed a more general definition of the concept of logical consequence (having Tarski’s as a special case of it) based on the concept of signedness instead of on that of truth. But these and other contributions are only available in Spanish, and are often not easily accessible.

It is worth mentioning here that, from a certain point in his career, the subjects of the theory of reason and non-classical logics became so intertwined that they turned into one and the same subject.

Paco never published a systematic treatise on logic. All his logic books were introductions or handbooks intended for secondary school or university students. This is related to the third category of works, which is precisely that of the teaching of logic. Miró Quesada has produced a handful of introductory texts to logic (and also to mathematics) that have been very influential in Peru for the better part of the last century. The importance of Miró Quesada in this area goes beyond Peru, for he was the author of what seems to be the first introductory text to mathematical logic published in Latin America: *Lógica: Curso Universitario (Logic: University Course, SPF, 1946)*.

The last category comprises contributions to deontic and legal logic. Paco was a pioneer in this field with his article ‘La lógica del deber ser y su eliminabilidad’ (The logic of ought-to-be and its eliminability, 1951), written the same year as von Wright’s *Deontic Logic*, and his dissertation called *Problemas Fundamentales de la Lógica Jurídica (Fundamental Problems of Legal Logic, 1953)*. Miró Quesada’s works in this last category are somewhat better known in Latin American intellectual spheres, although perhaps not sufficiently so.

In spite of his prolific career, which goes far beyond the areas described, Paco is mainly known among logicians for having coined the term ‘paraconsistent logic’ to designate those logic systems where the principles of non-contradiction and explosion do not hold in general. This collection starts with the first complete translation into English of the letter where this coinage was made, with a preface and annotations by L. F. Bartolo Alegre.

However, part of the purpose of this collection is to bring the work of this major Latin American exponent of philosophical logic to the attention of the world, so that his most recognised contribution to logic no longer be his coinage of this important term. This lead us to divide this issue into two parts.

The first part comprises works that engage directly with Paco's works and ideas. In an article in Spanish, J. C. Cifuentes presents Miró Quesada's philosophical spirit, connecting him with the tradition of the School of Athens, and showing the importance not only of mathematics in his work, but mainly that of metamathematics. This is followed by N. da Costa's historical article about Miró Quesada's philosophy of logic that includes Paco's reply, all of which is annotated by the editors in order to contextualise this dialogue. The next contribution is L. Piscoya Hermoza's critical presentation of Paco's works on logic, which is definitely the most in-depth study of this part of his work, and a good starting point for those interested in exploring it. Piscoya's discussion does not include an account of Miró Quesada's contributions to deontic and legal logic, but this is done in C. A. Serbena's contribution, in Portuguese, which also summarises and discusses some formulations of paraconsistent deontic logics, which were not developed by Paco himself. Next, we have A. Villarán's study on Miró Quesada's the principle of symmetry, which Paco considered as the supreme principle of reason. This is followed by a very detailed and rich discussion on the origin of the name 'paraconsistent' in the correspondence between Miró Quesada and da Costa, as well as in the III SLALM, by I. D'Ottaviano and E. Gomes. This first part is closed by A. Cordero Lecca's account of Paco's efforts to carry out and promote a philosophy of science and a theory of reason in line with contemporary scientific advances.

The second part comprises papers whose subjects were of Paco's interest, but that do not directly discuss his works and ideas. We open this section with D. Krause's discussion of the the impact of math in empirical theories apropos of Miró Quesada's discussion on the 'mathematising orgy' that took place in logic around the year 1900. Then, we have E. Agazzi's discussion, in Spanish, on the significance of the diversity of logical calculi for the question of the unity of reason. This is followed by an exploration by H. Bensusan, A. Calado, G. Carneiro, and E. Paiva into the possibility of formulating relations of logical consequence that are non-Tarskian, and which aim to broaden the notion of non-classical logics. Next, W. Carnielli, L. Frade, and A. Rodrigues present a tableaux system for the non-classical logics of evidence and truth. Finally, we close this part with R. Mora Ramirez's intellectual biography, in Spanish, of J. B. Ferro, a Peruvian professor of logic who was highly regarded by Paco.

As a colophon, we include the most complete bibliography of Miró Quesada's works published to date, compiled by L. F. Bartolo Alegre with the

collaboration of F. V. Cárdenas Maldonado, but largely indebted to that previously made by Peruvian philosopher D. Sobrevilla.

This issue is related to an event by the same name organised by the editors of this issue with the help of Fabiola Valeria Cárdenas Maldonado (UNMSM, Peru), Luis Carrera Honores (UNMSM, Peru), and Miguel Angel Merma Mora (UCSS, Peru). The event, which is part of the celebrations for the World Logic Day 2021, will be held virtually on 13-16 January 2021, and many of the contributions of this issue will be presented there. It will include sessions on heterodox logics, logical culture, history of logic, theory of reason and argumentation, philosophy of logic, and, of course, on Paco's legacy.

We cannot close this foreword without thanking all those who made possible this issue and the event referred above. First, we want to thank the *Society for Epistemology and Logic* (SEPLO) from Peru for having supported this publication. Second, we want to thank Jean-Yves Béziau and Marcelo Coniglio for inviting us to edit this issue. Third, we want to thank all the contributors to this volume, many of which also helped us reviewing some of the papers. We also want to thank Andrés Bobenrieth Miserda (UV, Chile), Verónica Borja Macías (UTM, Mexico), Manuel Correia Machuca (UC, Chile), Aldo Figallo-Orellano (UNS, Argentina/UNICAMP, Brazil), Steven French (Leeds, UK), Graham Priest (CUNY, USA), Walter B. Redmond (UPAEP, Mexico), María del Rosario Martínez-Ordaz (UFRJ, Brazil), and David Villena Saldaña (UNMSM, Peru/LN, Hong Kong) for helping us to review some contributions for this volume and the event.

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